

## REMARKS

1. Applicant has retained claims 1 and 3-69 in the application, several of them in at least slightly amended form. Applicant has amended claims 23 and 31 to overcome the objections of the Examiner. While studying the claims in this amendment, applicant amended other claims to avoid any problem of indefiniteness in these claims. Applicant has also made amendments in the claims to avoid any problems that claims 28 and 45 are in improper dependent form.

2. Applicant has not amended the claims to incorporate the insertion suggested by the Examiner in paragraph 4 of the Office Action dated 10/20/2003. Applicant refers specifically to the proposal by the Examiner that the lens shield be inserted into the claims. Applicant considers the insertion of the lens shield into all of the claims to be unnecessary since applicant believes that the recitation of the lens shield constitutes an unnecessary limitation that significantly reduces the scope of the protection provided to applicant in the claims. Additionally, applicant does not believe that the omission of the lens shield from the claims creates a gap between the recited steps, particularly since applicant has recited the step of creating a microscopic roughness on the surface of the wafer.

There is another reason why applicant does not believe it is necessary for applicant to insert into his claims the apparatus limitations proposed by the Examiner in paragraph 4 of the Office Action dated 10/20/2004. Applicant has recited the method step of creating the microscopic roughness on the surface of the wafer to receive a deposition of the material on the surface. This is sufficient. It is not necessary for applicant to recite how applicant accomplishes this step. Applicant's position is reinforced by the recitation in some of the claims that the microscopic roughness is created by providing ions of an inert gas on the surface of the wafer with an insufficient energy to etch the surface of the

wafer but with a sufficient energy to create the microscopic roughness on the surface of the wafer.

3. Applicant has amended claim 1 to incorporate the recitations in claim 2. Applicant has cancelled claim 2. Claims 1 and 3-69 are now in the application.

4. The Examiner has rejected claims 1-3 as anticipated by Akiyama patent 6,391,796. According to the Examiner:

"Akiyama teaches that the microscopic roughness on the surface of the wafer is created by providing ions of an inert gas (i.e., argon) on the surface of the wafer with an insufficient energy to etch the surface of the wafer but with a sufficient energy to create the microscopic roughness on the surface of the wafer (see col. 2, lines 29-42 and col. 3, lines 14-27)."

Akiyama does not disclose in col. 2, lines 29-42 or in col. 3, lines 14-27 that the microscopic roughness on the surface of the wafer is created by providing ions of an inert gas (e.g., argon) on the surface of the wafer with an insufficient energy to etch the surface of the wafer but with a sufficient energy to create the microscopic roughness on the surface of the wafer. These limitations are now recited in claims 1 and 3.

Applicant should like to indicate to the Examiner that Akiyama has to specifically disclose the language quoted in the previous paragraph in order for Akiyama to serve as a prior art reference. Indefinite and ambiguous statements are not sufficient. If Akiyama does not specifically disclose this language, Akiyama cannot be used as a prior art reference. If the Examiner still believes that Akiyama provides this disclosure, applicant would appreciate it if the Examiner would specify in the next Office Action by lines, and words in the lines, where Akiyama provides this disclosure.

5. Claim 5 has been rejected by the Examiner under 35 U.S.C. 102(a) as being clearly anticipated by the Admitted Prior Art. The Examiner has predicated his decision on the following:

"With respect to Claims (sic) 5, the Admitted Prior Art teaches removing (i.e., etching) a thin layer from the surface of the wafer, thereafter depositing a chromium layer with a low intrinsic tensile stress on the cleaned surface of the layer, and thereafter depositing a layer of nickel vanadium with an intrinsic stress on the surface of the chromium layer to neutralize (i.e., covering the chromium layer from the next deposited material) the low intrinsic tensile stress produced by the chromium layer (see specification, pages 1, 2 in its entirety, page 7 lines 5-14 and page 8 lines 6-10). The chromium layer has low intrinsic tensile stress since the material has a tensile load)."

The Admitted Prior Art does not teach the step of depositing the chromium layer with a low intrinsic tensile stress on the surface of the chromium layer. The Admitted Prior Art also does not teach the step of thereafter depositing a layer of nickel vanadium with an intrinsic stress on the surface of the chromium layer to neutralize the low intrinsic tensile stress produced by the chromium layer.

As applicant has previously indicated, prior art, to be effective as prior art, has to specifically disclose what is recited in a claim in order to be properly applied against the claim. Applicant does not believe that the Admitted Prior Art provides such a specific disclosure. Applicant would accordingly appreciate it if the Examiner would specify by lines, and words in the specified lines, where the Admitted Prior Art discloses the claim recitations discussed in the previous paragraph of this Section 5.

6. Claims 9-12, 22, 23, 29, 31, 39, 41-, 42, 44-58, 66, 68 and 69 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama as applied to claim 5 and further in view of the Admitted Prior Art. The Examiner has admitted the following on page 5 of the Office Action:

"Akiyama fails to disclose wherein the chromium is deposited in a layer on the microscopically rough surface of the wafer to produce an intrinsic tensile stress with a low stress value in the chromium layer and wherein the nickel vanadium layer is deposited on the surface of the chromium layer to produce a

low intrinsic compressive stress with a value to neutralize the low intrinsic tensile stress in the chromium layer."

The Examiner then attempts to use the Admitted Prior Art to produce what is allegedly missing from Akiyama.

Claims 9-12, 22, 23, 29, 31, 39, 41, 42, 44-58, 66, 68 and 69 are allowable over the combination of Akiyama and the Admitted Prior Art for the reasons discussed in detail in sections 4 and 5. Akiyama and the Admitted Prior Art cannot accordingly be combined to reject claims 9-12, 22, 23, 29, 31, 39, 41, 42, 44-58, 66, 68 and 69. As applicant has indicated in sections 4 and 5, applicant would like the Examiner to indicate by specific lines, and specific words in the specified lines, where Akiyama and the Admitted Prior Art disclose what applicant has recited in the claims and what the Examiner has asserted that the prior art discloses.

7. Claims 8, 13, 17-19, 24-28, 30, 31-33, 40, 42 and 43 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama and the Admitted Prior Art as applied to claims 5, 1, 22, 29, 30 and 39 and further in view of Honig patent 6,375,810. According to the Examiner on page 7 and 8 of the Office Action:

"With respect to claims 8, 13, 17, 24-27, 30, 31, 33, 40, 42 and 65, Akiyama – Admitted Prior Art [discloses] the claimed invention except wherein the chromium layer is deposited on the surface of the wafer in a magnetron with no RF bias or with a RF bias in the magnetron and with a low flow rate of molecules of an inert gas in the magnetron. However, Honig discloses a metal layer deposited on the surface of the wafer with no RF or with a RF in the magnetron and with a low flow rate (i.e., rate sufficient to deposit the metal layer) of molecules of an inert gas (i.e., argon) in the magnetron (see col. 1, lines 22-25 and col. 2, lines 1-39). Thus, any metal layer (i.e., chromium) can be deposited by the process of Honig, since any type of metal layer can not be ionized utilizing an environment with no RF bias or with a RF bias in the magnetron yielding a uniform deposition of metal. Akiyama – Admitter Prior Art and Honig have substantially the same environment of a wafer introduced in a chamber

with gas. Therefore, one skilled in the art at time of the invention would readily recognize having an environment with no RF in the magnetron with the process of Akiyama – Admitter Prior Art, since this environment would yield a uniform deposition of material that is not ionized on a wafer as taught by Honig."

As previously discussed in Section 4, Akiyama does not disclose that the microscopic roughness on the surface of the wafer is created by providing ions of an inert gas (i.e., argon) with an insufficient energy to etch the surface of the wafer but with a sufficient energy to create the microscopic roughness on the surface of the wafer. Furthermore, as previously discussed in Section 5, the Admitted Prior Art does not teach the step of depositing a layer of nickel vanadium with an intrinsic stress on the surface of the chromium layer to neutralize the low intrinsic stress produced by the chromium layer. Since Akiyama and the Admitted Prior Art fail to disclose important features recited in claims 8, 13, 17-19, 24-28, 30, 31-33, 40, 42 and 43, these claims are allowable over the combination of Akiyama, the Admitted Prior Art and Honig even if Honig discloses what the Examiner contends that Honig discloses.

However, contrary to the statements of the Examiner, Honig does not disclose a metal layer deposited on the surface of the wafer in a magnetron with no RF bias or with low RF bias in the magnetron and with a low flow rate (i.e., rate sufficient to deposit the metal layer) of molecules of an inert gas (i.e., argon) in the magnetron. The discussion in col. 1, lines 22-55 and col. 2, lines-1-39 of Honig is of a general nature and does not disclose or specify any of the particulars such as a metal layer deposited on the surface of the wafer in a magnetron with no RF bias or with a low RF in the magnetron and with a low flow rate of molecules of an inert gas. If the Examiner believes that Honig discloses these particulars, applicant would appreciate it if the Examiner would specify the language in Honig by specified lines (and specific words in the specified lines) that

supports the Examiner's position. Applicant should like to indicate to the Examiner that the language in Honig has to disclose these particular on a specific basis without any ambiguity or indefiniteness in order for Honig to constitute a proper prior art reference.

8. Applicant notes and appreciates the provisional allowance by the Examiner of claims 4, 6, 8, 14-16, 20, 21, 23, 34, 59, 60-64 and 67.

9. Reconsideration and allowance of the application are respectfully requested.

Respectfully submitted,

FULWIDER PATTON LEE & UTECHT, LLP

By: Ellsworth R. Roston  
Ellsworth R. Roston  
Registration No. 16,310

HOWARD HUGHES CENTER  
6060 Center Drive, Tenth Floor  
Los Angeles, CA 90045  
Telephone: (310) 824-5555  
Facsimile: (310) 824-9696  
Customer No. 24201

ERR:kk:dmc